AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1   Claim 1 (original): A contour compensation circuit that generates a contour-compensated

2   signal, by which a signal level of a contour of an object is emphasized, from an image signal

3   obtained by an image pickup of the object, wherein

4   the generation of the contour-compensated signal is performed regarding one channel of

5   channels that consists the image signal as a standard channel, and wherein

6   the generation of the contour-compensated signal is performed in order to prevent an

7   occurrence of a colored edge on the contour of the object, that are caused when the contour of the

8   object is emphasized, and

9   the contour compensation circuit comprising:

10   a reverse gamma controller, which performs a reverse gamma control on the standard

11   channel, and obtains a liner standard channel;

12   a contour compensation signal generator, which generates a contour compensation signal

13   from the liner standard channel;

14   a control signal generator, which computes a comparative value from the liner standard

15   channel and the contour compensation signal, and generates an evaluation value from a comparison

16   between the comparative value and a threshold value, and

17   the control signal generator generates a plurality of delayed evaluation values by the delay

18   of the evaluation value, and select a minimum value from among the evaluation value and the

19   delayed evaluation values, and output a selected minimum value as a control signal;

20   a calculator, which computes the contour-compensated signal based on the contour

21   compensation signal, and the control signal, and the liner standard channel;

22   a contour compensation signal retarder, which receives the contour compensation signal from

23   the contour compensation signal generator, and supplies the contour compensation signal to the

24   calculator with delay; and

25   a reverse gamma signal retarder, which receives the liner standard channel from the reverse

26   gamma controller, and supplies the liner standard channel to the calculator with delay.

1   Claim 2 (original): A contour compensation circuit according to claim 1, wherein

2   the control signal generator computes the evaluation value based on formula (1), when the

3   comparative value exceeds a maximum level of a display device,

4   evaluation value = (maximum level-liner standard channel)/contour compensation signal   ···(1)

5   the control signal generator computes the evaluation value based on formula (2), when the

6   comparative value less than a minimum level of the display device,

7   evaluation value = (minimum level-liner standard channel)/contour compensation signal   ···(2)

8   the control signal generator set the evaluation value to 1, when the comparative value less

9   than the maximum level of the display device and the comparative value exceeds the minimum level

10   of the display device, wherein

11   the maximum level means that a maximum level of a signal that can be displayed on the

12   display device, and wherein

13   the minimum level means that a minimum level of the signal that can be displayed on the

14   display device.

1   Claim 3 (original): A contour compensation circuit according to claim 2, wherein

2   the calculator including;

3   a multiplier, which obtains an adjusted contour compensation signal by a multiplication

4   between the control signal entered from the control signal generator and the contour compensation

5   signal entered from the contour compensation signal retarder; and

6   an accumulator, which obtains the contour-compensated signal by the accumulation between

7   the adjusted contour compensation signal and the liner standard channel.

1   Claim 4 (original): A contour compensation circuit according to claim 2, wherein

2   the image signal includes R (Red) channel, B (Blue) channel, and G (Green) channel, and

3   wherein

4   the reverse gamma controller regards the G (Green) channel as the standard channel, and

5   performs a reverse gamma control on the G (Green) channel.

1   Claim 5 (original): A contour compensation circuit according to claim 2, wherein

2   the image signal includes R (Red) channel, B (Blue) channel, G1 (Green 1) channel, and G2

3   (Green 2) channel, and wherein

4   the reverse gamma controller generates a first liner standard channel and a second line

5   standard channel from the G1 (Green 1) channel and the G2 (Green 2) channel, respectively, by

6   performing the reverse gamma control,

7   the contour compensation signal generator generates a first contour compensation signal and

8   a second contour compensation signal from the first liner standard channel and the second liner

9   standard channel, respectively,

10   the control signal generator generates a first control signal based on the first liner standard

11   channel and the first contour compensation signal, and generates a second control signal based on

12   the second liner standard channel and the second contour compensation signal,

13   the calculator computes the first contour-compensated signal based on the first contour

14   compensation signal, the first control signal, and the first liner standard channel, and computes the

15   second contour-compensated signal based on the second contour compensation signal, the second

16   control signal, and the second liner standard channel,

17   the contour compensation signal retarder receives the first contour compensation signal and

18   the second contour compensation signal from the contour compensation signal generator, and

19   supplies them to the calculator with delay, and

20   the reverse gamma signal retarder receives the first liner standard channel and the second

21   liner standard channel from the reverse gamma controller, and supplies them to the calculator with

22   delay.

1   Claim 6 (original):   A method for performing a contour compensation that generates a

2   contour-compensated signal, by which a signal level of a contour of an object is emphasized, from

3   an image signal obtained by an image pickup of the object, wherein

4   the generation of the contour-compensated signal is performed regarding one channel of

5   channels that consists the image signal as a standard channel, and wherein

6   the generation of contour-compensated signal is performed in order to prevent the occurrence

7   of a colored edge on the contour of the object, that are caused when the contour of the object is

8   emphasized, and the method comprising the steps of:

9   a reverse gamma control step, in which a liner standard channel is obtained by performing

10   a reverse gamma control on the standard channel;

11   a contour compensation signal generation step, in which a contour compensation signal is

12   generated from the liner standard channel;

13   a control signal generation step, in which a comparative value is computed from the liner

14   standard channel and the contour compensation signal, wherein

15   an evaluation value is generated from a comparison between the comparative value and a

16   threshold value, and a plurality of delayed evaluation values is generated by the delay of the

17   evaluation value, and a control signal is generated by selecting the minimum value from among the

18   evaluation value and delayed evaluation values, wherein

19   the evaluation value is computed based on formula (1), when the comparative value exceeds

20   a maximum level of a display device,

21   evaluation value = (maximum level-liner standard channel)/contour compensation signal   ···(1)

22

23   the evaluation value is computed based on formula (2), when the comparative value less than

24   a minimum level of the display device,

25   evaluation value = (minimum level-liner standard channel)/contour compensation signal   ···(2)

26   the evaluation value is set to 1, when the comparative value less than the maximum level of

27   the display device and the comparative value exceeds the minimum level of the display device,

28   wherein

29   the maximum level means that a maximum level of a signal that can be displayed on the

30   display device, and wherein

31   the minimum level means that a minimum level of the signal can be displayed on the display

32   device;

33   a calculation step, in which a contour-compensated signal is computed based on the contour

34   compensation signal, and the control signal, and the liner standard channel;

35   a contour compensation signal delay step, in which the contour compensation signal entered

36   from the contour compensation signal generator is supplied to the calculator with delay; and

37   a reverse gamma signal delay step, in which the liner standard channel entered from the

38   reverse gamma controller is supplied to the calculator.

1   Claim 7 (currently amended):   A storage medium readable by a computer, having stored

2   thereon a program of instructions executable by the computer to operate that operates an apparatus

3   so that the apparatus generates a contour-compensated signal, by which a signal level of a contour

4   of an object is emphasized, from an image signal obtained by an image pickup of the object, wherein

5   the generation of the contour-compensated signal is performed regarding one of channels that

6   consists the image signal as a standard channel, and wherein

7   the generation of contour-compensated signal is performed in order to prevent the occurrence

8   of a colored edge on the contour of the object, that are caused when the contour of the object is

9   emphasized, and the program comprising the functions of:

10   a reverse gamma control function, by which a liner standard channel is obtained from the

11   standard channel by a reverse gamma control;

12   a contour compensation signal generation function, by which a contour compensation signal

13   is generated from the liner standard channel;

14   a control signal generation function, by which a comparative value is computed from the liner

15   standard channel and the contour compensation signal, and an evaluation value is generated from

16   a comparison between the comparative value and a threshold value, a plurality of delayed evaluation

17   values is generated by the delay of the evaluation value, and a control signal is generated by selecting

18   the minimum value from among the evaluation value and delayed evaluation values, wherein

19   the evaluation value is computed based on formula (1), when the comparative value exceeds

20   a maximum level of a display device,

21   evaluation value = (maximum level-liner standard channel)/contour compensation signal   ···(1)

22   the evaluation value is computed based on formula (2), when the comparative value less than

23   a minimum level of a display device,

24   evaluation value = (minimum level-liner standard channel)/[[1]]contour compensation signal ···(2)

25   the evaluation value is set to 1, when the comparative value less than a maximum level of

26   a display device and the comparative value exceeds a minimum level of a display device, wherein

27   the maximum level means that the maximum level of the signal that can be displayed on a

28   display device, and wherein

29   the minimum level means that the minimum level of the signal can be displayed on the

30   display device;

31   a calculation function, in which a contour-compensated signal is computed based on the

32   contour compensation signal, and the control signal, and the liner standard channel;

33   a contour compensation signal delay function, by which the contour compensation signal

34   entered from the contour compensation signal generator is supplied to the calculator with delay; and

35   a reverse gamma signal delay function, by which the liner standard channel entered from the

36   reverse gamma controller, is supplied to the calculator.

1   Claim 8 (original): An image signal display device that generates a contour-compensated

2   signal, by which a signal level of a contour of the object is emphasized, from an image signal

3   obtained by an image pickup of an object, wherein

4   the generation of contour-compensated signal is performed in order to prevent the occurrence

5   of a colored edge on a contour of the object, that are caused when the contour of the object is

6   emphasized,

7   and wherein the object is displayed based on the contour-compensated signal, the image signal

8   display device comprising:

9   a contour compensation circuit of claim 2;

10   a gamma controller, which performs the gamma control on the contour-compensated signal

11   supplied from the contour compensation circuit, and obtains a converted contour-compensated

12   signal; and

13   a display device, which displays the object based on the converted contour-compensated

14   signal.

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